

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-26. cancelled

27. (original) The method as set forth in Claim 27 wherein the NOx catalyst is an SCR catalyst.

28. (original) The method as set forth in Claim 27 wherein the NOx catalyst is an ALNC catalyst.

29. (original) The method as set forth in Claim 27 wherein said NOx catalyst is an LNT.

30. (original) The method as set forth in Claim 30 wherein said operating condition is a temperature of said LNT wherein there is substantially no NOx conversion or adsorption in said LNT.

31. (original) The method as set forth in Claim 27 wherein said operating condition is a catalyst temperature below 150°C.

32. (original) The method as set forth in Claim 27 wherein said operating condition is a catalyst temperature greater than 450°C.

33. (original) A method for diagnosing degradation of an emission control system coupled downstream of an internal combustion engine, the system including a NOx catalyst having a first NOx sensor coupled upstream of the catalyst and a second NOx sensor coupled downstream of the catalyst, the method comprising:

providing an indication that a catalyst temperature is within a predetermined window;

in response to that indication, differentiating between the first NOx sensor and the second NOx sensor as a cause of the emission control system degradation based on an estimate of an amount of NOx in an exhaust gas mixture entering the catalyst, a first NOx sensor and a second NOx sensor reading.

34-42. cancelled

43. (new) A method for diagnosing degradation of a lean exhaust gas aftertreatment system, the system including a NOx catalyst having a first NOx sensor coupled upstream of the catalyst and a second NOx sensor coupled downstream of the catalyst, the method comprising:

comparing a first NOx sensor measurement and a second NOx sensor measurement when the catalyst is within a temperature range wherein a NOx conversion efficiency of the catalyst is substantially zero; and

providing an indication of system degradation when a difference between said first NOx sensor measurement and said second sensor measurement is greater than a predetermined value.

44. (new) A method for diagnosing degradation of a lean exhaust gas aftertreatment system, the system including a Lean NOx Trap (LNT) having a first NOx sensor coupled upstream of the LNT and a second NOx sensor coupled downstream of the LNT, the method comprising:

comparing a first NOx sensor measurement and a second NOx sensor measurement when the catalyst is within a temperature range wherein there is substantially no NOx conversion or adsorption in the LNT; and

providing an indication of system degradation when a difference between said first NOx sensor measurement and said second sensor measurement is greater than a second predetermined value.